

AMENDMENTS TO THE CLAIMS:

The following is a complete listing of the claims.

- 1.-41. (canceled)
42. (currently amended) A An isolated or recombinant nucleic acid sequence encoding a threonine deaminase protein effective to catalyze capable of catalyzing the conversion of threonine to α -ketobutyrate, wherein:
 - a. the encoded sequence encoding a leucine residue at amino acid position 447 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residue;
 - b. the encoded sequence encoding a leucine residue at amino acid position 481 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residue; or
 - c. the sequence encoding leucine residues at amino acid positions 447 and 481 of the wild type protein are independently replaced with sequences encoding alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residues.
43. (currently amended) A recombinant vector comprising a nucleic acid sequence encoding a threonine deaminase protein effective to catalyze capable of catalyzing the conversion of threonine to α -ketobutyrate, wherein:
 - a. the encoded sequence encoding a leucine residue at amino acid position 447 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residue;
 - b. the encoded sequence encoding a leucine residue at amino acid position 481 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residue; or
 - c. the sequence encoding leucine residues at amino acid positions 447 and 481 of the wild type protein are independently replaced with sequences encoding alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residues.

44. (currently amended) A recombinant host cell comprising a nucleic acid sequence encoding a threonine deaminase protein ~~effective to catalyze~~ capable of catalyzing the conversion of threonine to α -ketobutyrate, wherein:

- the encoded sequence encoding a leucine residue at amino acid position 447 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residue;
- the encoded sequence encoding a leucine residue at amino acid position 481 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residue; or
- the sequence encoding leucine residues at amino acid positions 447 and 481 of the wild type protein are independently replaced with sequences encoding alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residues.

45. (currently amended) A method of preparing recombinant host cells useful to convert threonine to α -ketobutyrate, the method comprising:

- selecting a host cell;
- transforming the selected host cell with a recombinant vector, wherein the recombinant vector comprises a nucleic acid sequence encoding a threonine deaminase protein ~~effective to catalyze~~ capable of catalyzing the conversion of threonine to α -ketobutyrate, wherein:
the encoded sequence encoding a leucine residue at amino acid position 447 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residue; the encoded sequence encoding a leucine residue at amino acid position 481 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residue; or the sequence encoding leucine residues at amino acid positions 447 and 481 of the wild type protein are independently replaced with sequences encoding alanine, isoleucine, valine, proline, phenylalanine, tryptophan, or methionine residues; and
- obtaining recombinant host cells.

46. (currently amended) A transgenic plant, the genome of which comprises a nucleic acid sequence encoding a threonine deaminase protein ~~effective to catalyze~~ capable of catalyzing the conversion of threonine to α -ketobutyrate, wherein:

- a. the encoded leucine residue at amino acid position 447 of the wild type protein is replaced with alanine, isoleucine, valine, ~~proline~~, phenylalanine, tryptophan, or methionine;
- b. the encoded leucine residue at amino acid position 481 of the wild type protein is replaced with alanine, isoleucine, ~~valine~~, proline, phenylalanine, tryptophan, or methionine; or
- c. the leucine residue at amino acid positions 447 and 481 of the wild type protein are independently replaced with alanine, isoleucine, ~~valine~~, ~~proline~~, phenylalanine, tryptophan, or methionine.